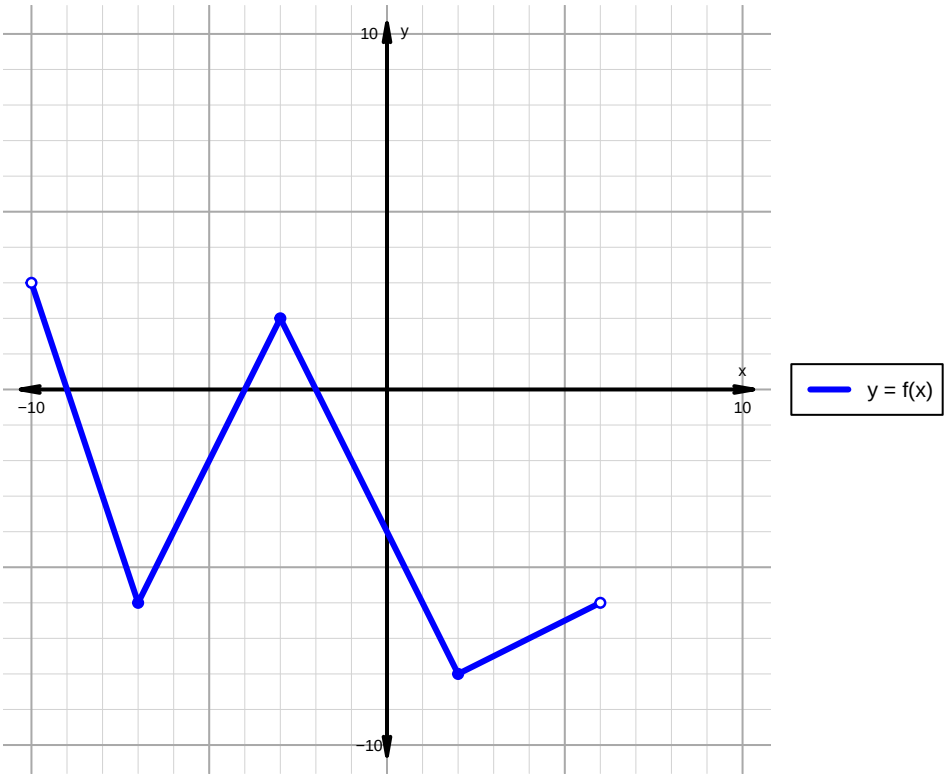
Name: Date:

Intervals, Transformations, and Slope Solution (version 120)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-10,-9)\cup(-4,-2)$
Negative	$(-9,-4)\cup(-2,6)$
Increasing	$(-7,-3)\cup(2,6)$
Decreasing	$(-10,-7)\cup(-3,2)$
Domain	$(-10,6)$
Range	$(-8,3)$

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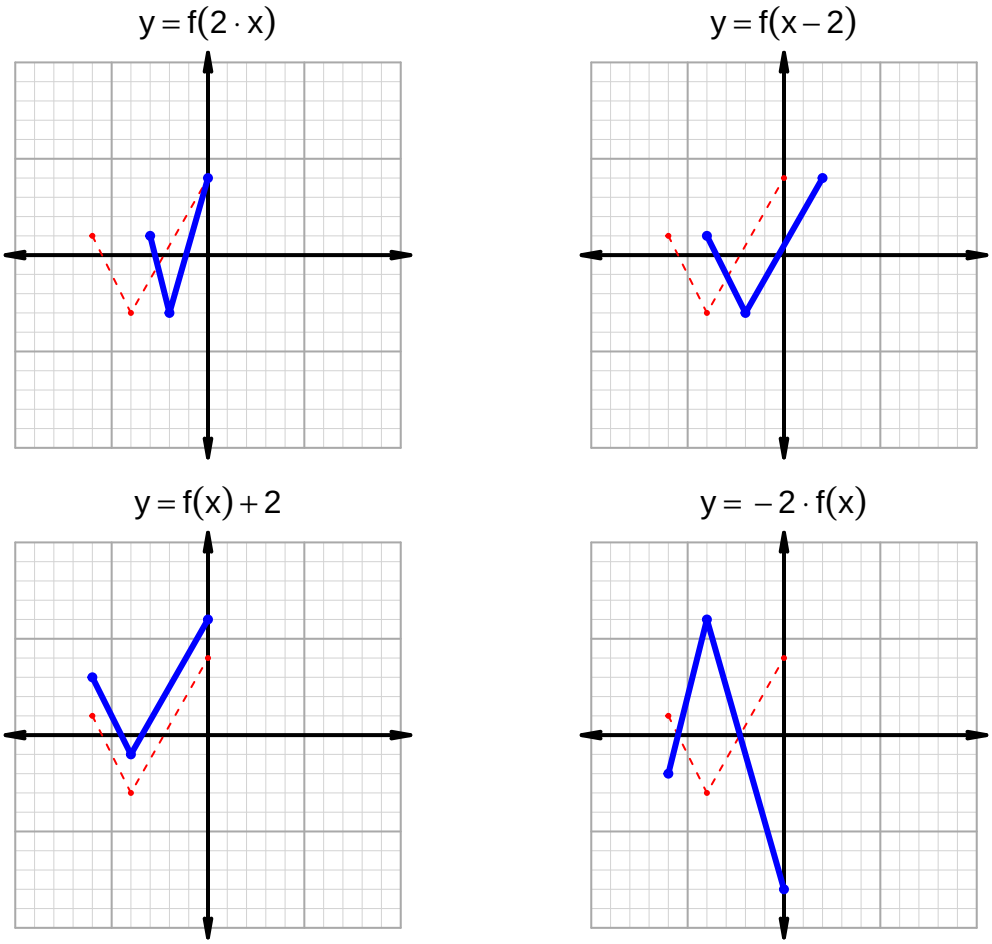
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 11$ and $x_2 = 56$. Express your answer as a reduced fraction.

x	$g(x)$
11	32
32	56
56	59
59	11

$\frac{f(56)-f(11)}{56-11} = \frac{59-32}{56-11} = \frac{27}{45}$

The greatest common factor of 27 and 45 is 9. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{3}{5}$$